

**DIVISION OF WATER QUALITY
GROUNDWATER SECTION, WSRO**

July 1, 1997

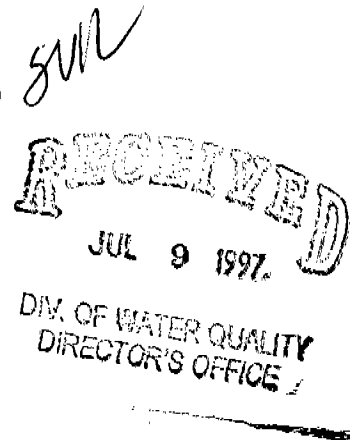
MEMORANDUM

TO: A. Preston Howard, Jr., Director

THROUGH: Sherri Knight, Regional Groundwater Supervisor, WSRO
and
Arthur Mouberry, Section Chief

FROM: Melanie Ross, Environmental Protection Consultant
- Guilford Co.

SUBJECT: NCAC 2L .0106(l) Corrective Action Plan
Yarboro Property, Melvin
2205 Oak Hill Drive
Greensboro, Guilford County
Groundwater Incident #10017
Site Priority Ranking E/OSO * Continued eligibility approved
(see attached)



I. Site History

The Melvin Yarboro property is located in a residential area of Greensboro, Guilford County. A 550-gallon non-commercial heating oil UST was removed from the property on February 24, 1993. Soil samples collected at removal from the final excavation indicated petroleum constituent contamination. A groundwater sample collected from the excavation pit confirmed dissolved hydrocarbon contamination at the site.

II. Incident Data

1. A. Setting: The site is located in a residential-suburban area of Greensboro, Guilford County, North Carolina. The immediate vicinity is residential.
- B. Pollutant: Dissolved hydrocarbon compounds:
- | | | | |
|---------|------------|------------------------|----------------|
| 2/24/97 | MW-1, MW-5 | 1,2-Dichlorobenzene | 10 ppb, 4 ppb |
| 2/24/97 | MW-1, MW-5 | 1,3-Dichlorobenzene | 4 ppb, 3 ppb |
| 2/24/97 | MW-1, MW-5 | 1,4-Dichlorobenzene | 12 ppb, 19 ppb |
| 2/24/97 | MW-5 | 2-Ethylhexyl Phthalate | 24.1 ppb |
- C. Source: Former heating oil UST
- D. Discovery Date: at removal of UST on February 24, 1993. UST reportedly taken out of service in 1980.
- E. Initial Corrective Action: Excavated UST.

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III. Notification Date

A. A Notice of Violation of NCAC Title 15A 2L was issued to Mr. Marvin Yarboro on September 2, 1994.

IV. Contamination

A. Soil Contamination: Approximately 250 tons of contaminated soil remain in place in the former tank basin vicinity. Maximum TPH concentrations of 1,450 ppm (3550) and 145 ppm (5030) are reported in soils.

B. Groundwater plume areal extent reported approximately 20 ft x 10 ft.

1. Shallow Aquifer: See section II.1.B. for contaminants and concentrations; MW-1 and MW-5 are installed in source vicinity. Four other monitor wells are located on-site.
2. Bedrock contamination: None noted.

V. Proposed Corrective Action System

A. Type System Proposed: .0106(L), groundwater natural attenuation, with excavation of contaminated soils as control of secondary source.

B. Pilot Test Results: no pilot tests have been conducted.

C. System Adequacy

1. Suitable, based on soil Type: NA
2. Suitable for Pollutant Type: Concentration of constituents will decrease through advection, dispersion, and diffusion processes.
3. Suitable, based Site Hydrogeology: The reported linear groundwater flow in saprolite is approximately 26.34 ft/yr.

D. Effluent Discharge Point & Volume (gpm): NA

E. Required Permit: NA

VI. Geology

A. Surficial Materials: Saprolite

B. Bedrock (age): Gneiss of unknown age

C. Soil Type: Silty clay.

VII. Hydrogeology

A. Hydraulic Conductivity: $2.57 \cdot 10^{-4}$ ft/min in saprolite

B. Groundwater Flow Direction: east

C. Hydraulic Gradient: 0.039

D. Groundwater Flow Velocity: 26.34 ft/yr in saprolite

E. Monitor Wells

1. Shallow: Six Type II, 2-inch diameter PVC screened in the saprolite aquifer.
2. Deep: No deep wells have been installed.

3. Placement of monitor wells: Adequate to track the plume migration.
F. Hydrogeologic Tests Conducted: one slug test

VIII. Potential Receptors

- A. Public Water Supply Wells. The site is supplied municipal water by the City of Greensboro. No private or public water supply wells were found during a reconnaissance of a 1,500 feet radius of the site.
B. Private Water Supply Wells: None
C. Surface Water Bodies: A tributary of Buffalo Lake is located approximately 1,500 east of the site.
D. Utilities: No utilities have been identified at the site.

IX. Administrative Requirements

- A. Sealed by L.G.
B. Form GW-100 included with an attachment.
C. Notification requirements met per 15A NCAC 2L .0114 with no comments.
E. Implementation Schedule included.
F. Monitoring Plan enclosed and found adequate.

X. Recommendation Criteria

The CAP met all requirements listed in 15A NCAC 2L .0106 (I).

- A. All primary source of contamination have reportedly been removed.
B. All secondary sources of contamination are proposed to be removed in CAP
C. Free product was not detected.
D. The contaminant levels are low and the extent of contaminant plume is minimal.
E. The time and direction of contaminated travel can be predicted with reasonable certainty.
F. The contaminant migration will not result in any violation of applicable groundwater standards at any existing or foreseeable receptor.
G. The nearest receptor is 1,500 feet down-gradient. The groundwater velocity is 26.34 ft/yr.
H. The contaminant plume is not expected to intercept surface waters.

I. A monitoring well network is in place as a part of this CAP to detect contaminants at least one year travel up-gradient of any potential receptors and no greater than the distance the groundwater at the contaminated site is predicted to travel in five years.

J. The proposed Corrective Action Plan appears to be consistent with all other environmental laws.

K. The site ranking score is 50/E.

L. Public Notice was provided in accordance with 15A NCAC 2L .0114(b) with no comments received.

M. WSRO recommends approval of the CAP.